Phone Off: 080-22961935 / 1946
Mobile: 98440 56576
E-mail: centrans9@gmail.com

BANGALORE UNIVERSITY
DEPARTMENT OF CIVIL ENGINEERING

JNANA BHARATHI
BANGALORE - 560 056

Date: 15-07-2021

BUB/CTE/2021-22/CA-

TESTING OF COARSE AGGREGATES (40mm):

Sub: Testing of Aggregates 40mm.
{Project*: Comprehensive Development of Bad Roads and Improvements to Road Side Drains, Footpaths, Asphalting Concreting including Culvert to Selected Main and other Connecting Roads of Packages No.01 in Ward No.14, Bagalgunte of Dasarahalli Division in Dasarahalli Zone (Comprising of 08 works as indicated in SL No.122, 123, 124, 125, 126, 127, 128, and 129}

Ref: Letter No. Testing/BUB/2021-22, dated 12-07-2021
Sample supplied to lab by : Sri.G.Chandrashekar, Contractor, Bangalore.
Report required for: Assistant Executive Engineer,
Bagalgunte Sub- Division,
BBMP, Bangalore.

Technical Reference: IS:2386 & IS 383-1970 (Reaffirmed on 2007)

TABLE - 1.1 : SIEVE ANALYSIS :

IS Sieve Size, mm	Percentage passing 40 mm Sample	Requirements as per IS 383-1970 (Reaffirmed on 2007) % Passing	
		Single size	*Graded*
40mm	97.15	85-100	95 – 100
20mm	52.80	0 -20	30- 70
10mm	26.40	0 -5	10- 35
4.75mm	Nil	------	0 - 5

TABLE 1. 2 :

SL No	Test conducted	Sample No	Results	Requirements as per IS:383-1970 & Tests Conforms to IS 2386(Part I to IV) – 1963 (Reaffirmed on 2007)
1.	Flakiness Index	As above	14.72 %	Not to exceed 25 %
2.	Crushing value	----,,----	25.63 %	Not to exceed 45 % for concrete other than for wearing surfaces and 30% for concrete for wearing surfaces

*As Furnished by Client.
The Results relate only to the items tested.

DEPARTMENT OF CIVIL ENGINEERING BANGALORE UNIVERSITY

Dr. MANJESH. L.
ME(Civil Engg.), Ph.D., MISTE., MIRC.
PROFESSOR
Department of Civil Engineering
Bangalore University, Jnanabharathi Campus
BANGALORE - 560 056. M: 98440 56576
E-mail: manjeshl@yahoo.com

Scanned with CamScanner

BANGALORE UNIVERSITY
DEPARTMENT OF CIVIL ENGINEERING

Phone Off: 080-22961935 / 1946
Mobile: 98440 56576
E-mail: centrans9@gmail.com

JNANA BHARATHI
BANGALORE - 560 056

BUB/CTE/2021-22/MS

Date: 15-07-2021

1. TESTING OF FINE AGGREGATES (ROBO SAND):

Sub: Testing of Robo Sand/M.Sand.

{Project*: Comprehensive Development of Bad Roads and Improvements to Road Side Drains, Footpaths, Asphalting Concreting including Culvert to Selected Main and other Connecting Roads of Packages No.01 in Ward No.14, Bagalgunte of Dasarahalli Division in Dasarahalli Zone (Comprising of 08 works as indicated in SL No.122, 123, 124, 125, 126, 127, 128, and 129}

Ref: Letter No. Testing/BUB/2021-22, dated 12-07-2021

Sample supplied to lab by : Sri.G.Chandrashekar, Contractor, Bangalore.

Report required for: Assistant Executive Engineer,
Bagalgunte Sub- Division,
BBMP, Bangalore.

Technical Reference: IS:2386 & IS 383-1970 (Reaffirmed on 2007)

TABLE - 1.1 : SIEVE ANALYSIS :

IS Sieve Size, mm	Percentage Passing	Specification as Per IS: 383-1970(Reaffirmed 2007) Percentage Passing				Remarks
		Zone-I	Zone-II	Zone -III	Zone -IV	
10.00	**100.00**	100	100	100	100	The Sample Conforms to Grading **Zone-II**
04.75	**95.60**	90-100	90-100	90-100	95-100	
02.36	**88.80**	60-95	75-100	85-100	95-100	
01.18	**74.90**	30-70	55-90	75-100	90-100	
600. mic	**48.30**	15-34	35-59	60-79	80-100	
300.mic	**26.10**	5-20	8-30	12-40	15-50	
150.mic	**7.92**	0-10	0-10	0-10	0-15	

TABLE 1.2 ;

Sl No	Test Conducted	Sample	Results	Requirements as Per IS. Specification IS :383-1970 (Reaffirmed 2007)
1.	Specific Gravity	001	**2.618**	----------

*As Furnished by client.

The Results relate only to the items tested

DEPARTMENT OF CIVIL ENGINEERING BANGALORE UNIVERSITY

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಜ. ದಾಸರಹಳ್ಳಿ ಉಪ ವಿಭಾಗ
ಬಾಗಲಗುಂಟೆ. ಬಿ ಬಿ ಎಂ ಪಿ
ಬೆಂಗಳೂರು 560073

Dr. MANJESH. L.
ME(Civil Engg.), Ph.D., MISTE., MIRC.
PROFESSOR
Department of Civil Engineering
Bangalore University, Jnanabharathi Campus
BANGALORE - 560 056. M: 98440 56576
E-mail: manjeshl@yahoo.com

Scanned with CamScanner

BANGALORE UNIVERSITY
DEPARTMENT OF CIVIL ENGINEERING

Phone Off: 080-22961935 / 1946
Mobile: 98440 56576
E-mail: centrans9@gmail.com

JNANA BHARATHI
BANGALORE - 560 056

BUB/CTE/2021-22/Cube

Date: 27-07-2021

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes for 07 days Compressive Strength
{Project*: Comprehensive Development of Bad Roads and Improvements to Road Side Drains, Footpaths, Asphalting Concreting including Culvert to Selected Main and other Connecting Roads of Packages No.01 in Ward No.14, Bagalgunte of Dasarahalli Division in Dasarahalli Zone (Comprising of 08 works as indicated in SL No.122, 123, 124, 125, 126, 127, 128, and 129}
Ref: Letter No. Testing/BUB/2021-22, dated 26-07-2021
Sample supplied to lab by : Sri.G.Chandrashekar, Contractor, Bangalore.
Report required for: Assistant Executive Engineer, Bagalgunte Sub- Division, BBMP, Bangalore.
Technical Reference: IS: 516

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M_{20}

Location* : RCC Drain

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in Mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	19-07-21	26-07-21	07	22500	410	18.22	**18.67**
	002	"	"	"	"	420	18.67	
	003	"	"	"	"	430	19.11	

* As furnished by Client.
The Results relate only to the items tested.

DEPARTMENT OF CIVIL ENGINEERING BANGALORE UNIVERSITY

Dr. MANJESH. L.
ME(Civil Engg.), Ph.D., MISTE., MIRC.
PROFESSOR
Department of Civil Engineering
Bangalore University, Jnanabharathi Campus
BANGALORE - 560 056. M: 98440 56576
E-mail: manjeshl@yahoo.com

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಇ. ದಾಸರಹಳ್ಳಿ ಉಪ ವಿಭಾಗ
ಬಾಗಲಗುಂಟೆ. ಜಿ.ಬಿ.ಎಂ.ಪಿ
ಬೆಂಗಳೂರು-560073

Scanned with CamScanner

BANGALORE UNIVERSITY
DEPARTMENT OF CIVIL ENGINEERING

Phone Off: 080-22961935 / 1946
Mobile: 98440 56576
E-mail: centrans9@gmail.com

JNANA BHARATHI
BANGALORE - 560 056

BUB/CTE/2021-22/Cube

Date: 19-08-2021

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes for 28 days Compressive Strength
{Project*: Comprehensive Development of Bad Roads and Improvements to Road Side Drains, Footpaths, Asphalting Concreting including Culvert to Selected Main and other Connecting Roads of Packages No.01 in Ward No.14, Bagalgunte of Dasarahalli Division in Dasarahalli Zone (Comprising of 08 works as indicated in SL No.122, 123, 124, 125, 126, 127, 128, and 129}
Ref: Letter No. Testing/BUB/2021-22, dated 17-08-2021
Sample supplied to lab by : Sri.G.Chandrashekar, Contractor, Bangalore.
Report required for: Assistant Executive Engineer, Bagalgunte Sub- Division, BBMP, Bangalore.
Technical Reference: IS: 516

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M_{20}

Location* : RCC Drain

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in Mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	20-07-21	17-08-21	28	22500	530	23.56	**23.63**
	002	"	"	"	"	540	24.00	
	003	"	"	"	"	525	23.33	

* As furnished by Client.
The Results relate only to the items tested.

DEPARTMENT OF CIVIL ENGINEERING BANGALORE UNIVERSITY

19/8/2021

Dr. MANJESH. L.
ME(Civil Engg.), Ph.D., MISTE., MIRC.
PROFESSOR
Department of Civil Engineering
Bangalore University, Jnanabharathi Campus
BANGALORE - 560 056. M: 98440 56576
E-mail: manjeshl@yahoo.com

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಇ. ದಾಸರಹಳ್ಳಿ ಉಪ ವಿಭಾಗ
ಬಾಗಲಗುಂಟೆ. ಜಿ.ಜಿ.ಎಂ.ಪಿ
ಬೆಂಗಳೂರು-560073

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BANGALORE UNIVERSITY
DEPARTMENT OF CIVIL ENGINEERING

Phone Off: 080-22961935 / 1946
Mobile: 98440 56576
E-mail: centrans9@gmail.com

JNANA BHARATHI
BANGALORE - 560 056

BUB/CTE/2021-22/Cube

Date: 20-08-2021

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes for 28 days Compressive Strength
{Project*: Comprehensive Development of Bad Roads and Improvements to Road Side Drains, Footpaths, Asphalting Concreting including Culvert to Selected Main and other Connecting Roads of Packages No.01 in Ward No.14, Bagalgunte of Dasarahalli Division in Dasarahalli Zone (Comprising of 08 works as indicated in SL No.122, 123, 124, 125, 126, 127, 128, and 129}
Ref: Letter No. Testing/BUB/2021-22, dated 19-08-2021
Sample supplied to lab by : Sri.G.Chandrashekar, Contractor, Bangalore.
Report required for: Assistant Executive Engineer, Bagalgunte Sub- Division, BBMP, Bangalore.
Technical Reference: IS: 516

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M_{20}

Location* : Raft and Wall

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in Mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	23-07-21	20-08-21	28	22500	535	23.78	**23.56**
	002	"	"	"	"	540	24.00	
	003	"	"	"	"	515	22.89	

* As furnished by Client.
The Results relate only to the items tested.

DEPARTMENT OF CIVIL ENGINEERING BANGALORE UNIVERSITY

20/8/2021

Dr. MANJESH. L.
ME(Civil Engg.), Ph.D., MISTE., MIRC.
PROFESSOR
Department of Civil Engineering
Bangalore University, Jnanabharathi Campus
BANGALORE - 560 056. M: 98440 56576
E-mail: manjeshl@yahoo.com

ಸಹಾಯಕ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಭಿಯಂತರರು
ಆ ದಾಸರಹಳ್ಳಿ ಉಪ ವಿಭಾಗ
ಬಾಗಲಗುಂಟೆ, ಜಿಕೆವಿಕೆ
ಬೆಂಗಳೂರು-560073

Scanned with CamScanner

BANGALORE UNIVERSITY
DEPARTMENT OF CIVIL ENGINEERING

Phone Off: 080-22961935 / 1946
Mobile: 98440 56576
E-mail: centrans9@gmail.com

JNANA BHARATHI
BANGALORE - 560 056

BUB/CTE/2021-22/Cube

Date: 12-08-2021

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes for 07 days Compressive Strength
{Project*: Comprehensive Development of Bad Roads and Improvements to Road Side Drains, Footpaths, Asphalting Concreting including Culvert to Selected Main and other Connecting Roads of Packages No.01 in Ward No.14, Bagalgunte of Dasarahalli Division in Dasarahalli Zone (Comprising of 08 works as indicated in SL No.122, 123, 124, 125, 126, 127, 128, and 129}
Ref: Letter No. Testing/BUB/2021-22, dated 11-08-2021
Sample supplied to lab by : Sri.G.Chandrashekar, Contractor, Bangalore.
Report required for: Assistant Executive Engineer, Bagalgunte Sub- Division, BBMP, Bangalore.
Technical Reference: IS: 516

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M_{20}

Location* : Raft and Wall

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in Mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	04-08-21	11-08-21	07	22500	385	17.11	17.33
	002	"	"	"	"	395	17.56	
	003	"	"	"	"	390	17.33	

* As furnished by Client.
The Results relate only to the items tested.

DEPARTMENT OF CIVIL ENGINEERING BANGALORE UNIVERSITY

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಚಿ. ದಾಸರಹಳ್ಳಿ ಉಪ ವಿಭಾಗ
ಬಾಗಲಗುಂಟೆ. ಜಿ.ಬಿ.ಎಂ.ಪಿ
ಬೆಂಗಳೂರು-560073

Dr. MANJESH. L.
ME(Civil Engg.), Ph.D., MISTE., MIRC.
PROFESSOR
Department of Civil Engineering
Bangalore University, Jnanabharathi Campus
BANGALORE - 560 056. M: 98440 56576
E-mail: manjeshl@yahoo.com

Scanned with CamScanner

BANGALORE UNIVERSITY
DEPARTMENT OF CIVIL ENGINEERING

Phone Off: 080-22961935 / 1946
Mobile: 98440 56576
E-mail: centrans9@gmail.com

JNANA BHARATHI
BANGALORE - 560 056

BUB/CTE/2021-22/Cube

Date: 02-09-2021

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes for 28 days Compressive Strength
{Project*: Comprehensive Development of Bad Roads and Improvements to Road Side Drains, Footpaths, Asphalting Concreting including Culvert to Selected Main and other Connecting Roads of Packages No.01 in Ward No.14, Bagalgunte of Dasarahalli Division in Dasarahalli Zone (Comprising of 08 works as indicated in SL No.122, 123, 124, 125, 126, 127, 128, and 129}
Ref: Letter No. Testing/BUB/2021-22, dated 01-09-2021
Sample supplied to lab by : Sri.G.Chandrashekar, Contractor, Bangalore.
Report required for: Assistant Executive Engineer, Bagalgunte Sub- Division, BBMP, Bangalore.
Technical Reference: IS: 516

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M_{20}

Location* : Raft and Wall

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in Mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	04-08-21	01-09-21	28	22500	525	23.33	**23.85**
	002	"	"	"	"	545	24.22	
	003	"	"	"	"	540	24.00	

* As furnished by Client.
The Results relate only to the items tested.

DEPARTMENT OF CIVIL ENGINEERING BANGALORE UNIVERSITY

ಸಹಾಯಕ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಭಿಯಂತರರು
ಇ. ದಾಸರಹಳ್ಳಿ ಉಪ ವಿಭಾಗ
ಬಾಗಲಗುಂಟೆ, ಜಿ.ಪಿ.ಎಂ.ಪಿ
ಬೆಂಗಳೂರು 560073

Dr. MANJESH. L.
ME(Civil Engg.), Ph.D., MISTE., MIRC.
PROFESSOR
Department of Civil Engineering
Bangalore University, Jnanabharathi Campus
BANGALORE - 560 056. M: 98440 56576
E-mail: manjeshl@yahoo.com

Scanned with CamScanner

BANGALORE UNIVERSITY
DEPARTMENT OF CIVIL ENGINEERING

Phone Off: 080-22961935 / 1946
Mobile: 98440 56576
E-mail: centrans9@gmail.com

JNANA BHARATHI
BANGALORE - 560 056

BUB/CTE/2021-22/Cube

Date: 24-08-2021

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes for 07 days Compressive Strength
{Project*: Comprehensive Development of Bad Roads and Improvements to Road Side Drains, Footpaths, Asphalting Concreting including Culvert to Selected Main and other Connecting Roads of Packages No.01 in Ward No.14, Bagalgunte of Dasarahalli Division in Dasarahalli Zone (Comprising of 08 works as indicated in SL No.122, 123, 124, 125, 126, 127, 128, and 129}
Ref: Letter No. Testing/BUB/2021-22, dated 23-08-2021
Sample supplied to lab by : Sri.G.Chandrashekar, Contractor, Bangalore.
Report required for: Assistant Executive Engineer, Bagalgunte Sub- Division, BBMP, Bangalore.
Technical Reference: IS: 516

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M_{20}

Location* : Precast Slab

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in Mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	16-08-21	23-08-21	07	22500	400	17.78	**17.63**
	002	"	"	"	"	390	17.33	
	003	"	"	"	"	400	17.78	

* As furnished by Client.
The Results relate only to the items tested.

DEPARTMENT OF CIVIL ENGINEERING BANGALORE UNIVERSITY

Dr. MANJESH. L.
ME(Civil Engg.), Ph.D., MISTE., MIRC.
PROFESSOR
Department of Civil Engineering
Bangalore University, Jnanabharathi Campus
BANGALORE - 560 056. M: 98440 56576
E-mail: manjeshl@yahoo.com

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BANGALORE UNIVERSITY
DEPARTMENT OF CIVIL ENGINEERING

Phone Off: 080-22961935 / 1946
Mobile: 98440 56576
E-mail: centrans9@gmail.com

JNANA BHARATHI
BANGALORE - 560 056

BUB/CTE/2021-22/Cube

Date: 26-08-2021

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes for 07 days Compressive Strength

{Project*: Comprehensive Development of Bad Roads and Improvements to Road Side Drains, Footpaths, Asphalting Concreting including Culvert to Selected Main and other Connecting Roads of Packages No.01 in Ward No.14, Bagalgunte of Dasarahalli Division in Dasarahalli Zone (Comprising of 08 works as indicated in SL No.122, 123, 124, 125, 126, 127, 128, and 129}

Ref: Letter No. Testing/BUB/2021-22, dated 25-08-2021

Sample supplied to lab by : Sri.G.Chandrashekar, Contractor, Bangalore.

Report required for: Assistant Executive Engineer, Bagalgunte Sub- Division, BBMP, Bangalore.

Technical Reference: IS: 516

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M_{20}

Location* : Precast Slab

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in Mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	18-08-21	25-08-21	07	22500	390	17.33	18.00
	002	"	"	"	"	410	18.22	
	003	"	"	"	"	415	18.44	

* As furnished by Client.

The Results relate only to the items tested.

DEPARTMENT OF CIVIL ENGINEERING BANGALORE UNIVERSITY

Dr. MANJESH. L.
ME(Civil Engg.), Ph.D., MISTE., MIRC.
PROFESSOR
Department of Civil Engineering
Bangalore University, Jnanabharathi Campus
BANGALORE - 560 056. M: 98440 56576
E-mail: manjeshl@yahoo.com

Scanned with CamScanner

Phone Off: 080-22961935 / 1946
Mobile: 98440 56576
E-mail: centrans9@gmail.com

BANGALORE UNIVERSITY
DEPARTMENT OF CIVIL ENGINEERING

JNANA BHARATHI
BANGALORE - 560 056

BUB/CTE/2021-22/Kerb- 1

Date: 28-08-2021

TEST REPORT

Sub: Testing of Pre-cast Material-Kerb Stones.
{Project*: Comprehensive Development of Bad Roads and Improvements to Road Side Drains, Footpaths, Asphalting Concreting including Culvert to Selected Main and other Connecting Roads of Packages No.01 in Ward No.14, Bagalgunte of Dasarahalli Division in Dasarahalli Zone (Comprising of 08 works as indicated in SL No.122, 123, 124, 125, 126, 127, 128, and 129}

Ref: Letter No. Testing/BUB/2021-22, dated 23-08-2021
Sample supplied to lab by : Sri.G.Chandrashekar, Contractor, Bangalore.
Report required for: Assistant Executive Engineer, Bagalgunte Sub- Division, BBMP, Bangalore.
Technical reference*: IS 5758-1984(RA 2005).

1.PHYSICAL TESTS ON KERB STONES :

Sl No.	Details	Flexural strength, fcr in N/sqmm	Characteristic Compressive Strength, fck in N/sqmm	Remarks
1	Kerb Stone	3.15	20.25	As per Cl. 6.2.2 of IS 456- 2000, fcr =0.7√ fck

2. WATER ABSORPTION TEST

Sl No	Identification	Water absorption %	Average value %
1	001	4.48	4.56
2	002	4.59	
3	003	4.63	

*As furnished by Client.
The Results relate only to the items tested.

DEPARTMENT OF CIVIL ENGINEERING BANGALORE UNIVERSITY

Dr. MANJESH. L.
ME(Civil Engg.), Ph.D., MISTE., MIRC.
PROFESSOR
Department of Civil Engineering
Bangalore University, Jnanabharathi Campus
BANGALORE - 560 056. M: 98440 56576
E-mail: manjeshl@yahoo.com

Scanned with CamScanner

BANGALORE UNIVERSITY
DEPARTMENT OF CIVIL ENGINEERING

Phone Off: 080-22961935 / 1946
Mobile: 98440 56576
E-mail: centrans9@gmail.com

JNANA BHARATHI
BANGALORE - 560 056

BUB/CTE/2021-22/Kerb- 2

Date: 29-08-2021

TEST REPORT

Sub: Testing of Pre-cast Material-Kerb Stones.
{Project*: Comprehensive Development of Bad Roads and Improvements to Road Side Drains, Footpaths, Asphalting Concreting including Culvert to Selected Main and other Connecting Roads of Packages No.01 in Ward No.14, Bagalgunte of Dasarahalli Division in Dasarahalli Zone (Comprising of 08 works as indicated in SL No.122, 123, 124, 125, 126, 127, 128, and 129}

Ref: Letter No. Testing/BUB/2021-22, dated 24-08-2021
Sample supplied to lab by : Sri.G.Chandrashekar, Contractor, Bangalore.
Report required for: Assistant Executive Engineer, Bagalgunte Sub- Division, BBMP, Bangalore.

1.PHYSICAL TESTS ON KERB STONES :

Sl No.	Details	Flexural strength, fcr in N/sqmm	Characteristic Compressive Strength, fck in N/sqmm	Remarks
1	Kerb Stone	3.20	**20.90**	As per Cl. 6.2.2 of IS 456- 2000, fcr =0.7√ fck

2. WATER ABSORPTION TEST

Sl No	Identification	Water absorption %	Average value %
1	001	4.53	**4.62**
2	002	4.62	
3	003	4.71	

*As furnished by Client.
The Results relate only to the items tested.

DEPARTMENT OF CIVIL ENGINEERING BANGALORE UNIVERSITY

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಜ್ಞಾ ದಾಸರಹಳ್ಳಿ ಉಪ ವಿಭಾಗ
ಬಾಗಲಗುಂಟೆ, ಜಿ.ಜಿ.ಎಂ.ಪಿ
ಬೆಂಗಳೂರು 560073

Dr. MANJESH. L.
ME(Civil Engg.), Ph.D., MISTE., MIRC.
PROFESSOR
Department of Civil Engineering
Bangalore University, Jnanabharathi Campus
BANGALORE - 560 056. M: 98440 56576
E-mail: manjeshl@yahoo.com

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TEJUS
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PMC for the Package-1 civil works in Dasarahalli

Summary of Frequencies of Field tests and lab tests conducted

Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	Tejus Consultants
Contractor :	Sri Sai Charan Constructions
Name of Work:	Comprehensive development of bad roads and improvements to road side drain, footpaths, Asphalting and concreting including culvert selected main and other connecting roads of package No.1 in ward No.14, Bagalagunte of Dasarahalli Division in Dasrahalli zone Comprising of 8 works as indicated in Sl No. 122, 123, 124, 125, 126, 127, 128 & 129

Sl no.	Description	Plain Cement Concrete (1:3:6)			
		Quantity Cum	Frequency of Tests	Test required	Test Carried out
1	**Cement**	274.65	OPC 43 Grade		
1	Consistency Test		1 test / sourse of supply	1	1
2	Fineness Test		1 test / sourse of supply	1	1
3	Soundness Test		1 test / sourse of supply	1	1
4	Compressive strenght test				
i	7-days		1 test / sourse of supply	1	1
ii	28-days		1 test / sourse of supply	1	
	Fine aggrigate				
5	Gradation test		1 test / day	6	6
6	Water absorption test		Regular Interval	6	6
	Coarse aggrigate				
7	Gradation test		1 test / day	6	6
8	Water absorption test		Regular Interval	6	6
9	Impact test		1 test / sourse of supply	1	1

Note: Frequency of tests as per Specifications MORT&H, V Revision, Section 900.

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Contractor

Assistant Engineer

Assistant Executive Engineer

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FINENESS (CEMENT)

(IS : 4031 (Part-5) -1988)

Date of Tested : 27-07-2021

Sl no.	Description	Trial 1	Trial 2	Trial 3
1	Weight of Cement before seive (g)	100	100	100
2	Weight of residue retained on 90mm seive (g)	3.70	3.60	3.80
3	Percentage retained (%)	3.70	3.60	3.80
4	Average Percentage retained (%)	3.70		

Residue of Cement is 3.70%

Maximum allowable residue by mass of ordinary portland cement is 10%

Remarks: Results found Satisfactory

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SOUNDNESS (CEMENT)

(IS : 4031 (Part-3) -1988)

			Date of Tested :	27-07-2021
Sl no.	Description	Trial 1	Trial 2	Trial 3
1	Initial difference between indicator point of Lechatelier mould	11	10	11
2	Final difference between indicator point of Lechatelier mould	15.00	15.00	16.00
3	Difference or Expansion	4.00	5.00	5.00
4	Average Difference or Expansion (mm)	4.67		

Difference in Expansion of Cement is 4.67mm

Maximum allowable Expansion of Cement is 10mm

Remarks: Results found Satisfactory

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COMPRESSIVE STRENGTH OF CONCRETE CUBE

(IS: 516-1991)

Sample no-5

Sl No.	Cube	Concrete Grade	Date of casting	Date of testing	Age at test (Days)	Weight (g)	Dimension (LxWxH)	Density (kg/m3)	Max Load (kN)	Area (mm2)	Compressive Strength (N/mm2)	Average sample (N/mm2)
1	P1	M-10	30-07-2021	06-08-2021	7	8439	150*150*150	2500.44	158	22500	7.02	6.93
2	P2	M-10	30-07-2021	06-08-2021	7	8526	150*150*150	2526.22	158	22500	7.02	
3	P3	M-10	30-07-2021	06-08-2021	7	8481	150*150*150	2512.89	152	22500	6.76	

Remarks:

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COMPRESSIVE STRENGTH OF CONCRETE CUBE

(IS: 516-1991)

Sample no-3

Sl No.	Cube	Concrete Grade	Date of casting	Date of testing	Age at test (Days)	Weight (g)	Dimension (LxWxH)	Density (kg/m3)	Max Load (kN)	Area (mm2)	Compressive Strength (N/mm2)	Average sample (N/mm2)
1	P1	M-10	27-07-2021	24-08-2021	28	8439	150*150*150	2500.44	229	22500	10.18	10.41
2	P2	M-10	27-07-2021	24-08-2021	28	8526	150*150*150	2526.22	234	22500	10.40	
3	P3	M-10	27-07-2021	24-08-2021	28	8481	150*150*150	2512.89	240	22500	10.67	

Remarks:

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SEIVE ANALYSIS (FINE AGGREGATES)

(IS : 2386 (Part-1) -1963)

Sample no-5

Description of Material : M-Sand

Date of Tested : 23-07-2021

Weight of Sample : 200

S.No.	IS Seive Size	Weight Retained	Cumulative weight retained	Cumulative Percentage of Retained	Cumulative Percentage of Passing	Governing Spec. Requirements Passing (%)		
		(gm)	(gm)	(%)	(%)	Zone-1	Zone-2	Zone-3
1	10mm	0	0	0	100	100	100	100
2	4.75mm	20	20	10.00	90.00	90-100	90-100	90-100
3	2.36mm	23	43	21.50	78.50	60-95	75-100	85-100
4	1.18mm	15	58	29.00	71.00	30-70	55-90	75-100
5	600um	40	98	49.00	51.00	15-34	35-59	60-79
6	300um	63	161	80.50	19.50	15-20	8-30	12-40
7	150um	32	193	96.50	3.50	0-10	0-10	0-10
8	Pan	7	200	100.00	-	-	-	-
	Total	200			Gradation Zone of sand :			2

Remarks: Results found Satisfactory

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SEIVE ANALYSIS (COARSE AGGREGATES 40MM & DOWN)

(IS : 2386 (Part-1) -1997)

Sample no-4

Wt of sample (gms) :	5000			Date of Tested :	28-07-2021
IS Sieve Size	Wt.of sample Retained (gm)	Cumulative wt Retained (gm)	Percentage of wt. Retained (%)	Percentage of wt. Passing	Permissible value
80.00	0	0	0	100.00	100.00
40.00	110	110	2.20	97.80	95-100
20.00	1700	1810	36.20	63.80	30-70
10	1560	3370	67.40	32.60	.10-35
4.75	1555	4925	98.50	1.50	0-5
Pan	75	5000	100.00	0.00	-

Remarks: Results found Satisfactory

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SIEVE ANALYSIS (COARSE AGGREGATES 20MM & DOWN)

(IS : 2386 (Part-1) -1963)

Sample no-1

Wt of sample (gms) :	5000			Date of Tested :	17-08-2021
IS Sieve Size	Wt.of sample Retained (gm)	Cumulative wt Retained (gm)	Percentage of wt. Retained (%)	Percentage of wt. Passing	Permissible value for 12.5mm
20.00	0	0	0	100.00	100.00
12.50	458	458	9.16	90.84	90-100
10.00	944	1402	28.04	71.96	40-85
4.75	3300	4702	94.04	5.96	0-10
Pan	298	5000	100.00	-	-

Remarks: Results found Satisfactory

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COMPRESSIVE STRENGTH OF CONCRETE CUBE

(IS: 516-1991)

Sample no-6

Sl No.	Cube	Concrete Grade	Date of casting	Date of testing	Age at test (Days)	Slump (mm)	Weight (g)	Dimension (LxWxH)	Density (kg/m3)	Max Load (kN)	Area (mm2)	Compressive Strength (N/mm2)	Average sample (N/mm2)
1	P1	M-20	20-08-2021	27-08-2021	7	42	8439	150*150*150	2500.44	302	22500	13.42	13.29
2	P2	M-20	20-08-2021	27-08-2021	7	40	8526	150*150*150	2526.22	300	22500	13.33	
3	P3	M-20	20-08-2021	27-08-2021	7	44	8481	150*150*150	2512.89	295	22500	13.11	

Remarks:

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COMPRESSIVE STRENGTH OF KERB STONE

(IS : 516-1959)

Sample -2

Description of Structure : Kerb Stone Date: 26-08-2021

Kerb Stone	Identification	Failure Load (KN)	Compressive Srtength (N/mm2)	Average sample (N/mm2)
1	Stock at Site	481.00	16.59	16.71
2		485.00	16.72	
3		488.00	16.83	

NOTE : Strength Required for Kerb Stone = 16.71 N/mm².

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STEEL BAR TEST

(AS PER IS 1786-2008)

SL NO	Nominal Size mm	Date of testing	Carbon Test %	Sulphur test %	Phosphorus test %	0.2 Yeild stress N/mm2	Tensile Strength N/ mm2	Elongation%	Bend test	Re-bend test	Grade	Remarks
1	8	11-08-2021	0.24	0.04	0.036	546	554	16.00%	ok	ok	Fe550	
2	10	13-08-2021	0.24	0.04	0.04	554	564	16.00%	ok	ok	Fe550	
3	12	13-08-2021	0.26	0.046	0.055	562	584	16.00%	ok	ok	Fe550	

Remarks : Results Found to be satisfactory.

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GRADATION OF AGGREGATES (G.S.B)-Grade-V

Total weight of sample taken (gms) 30000 — Date of Test: 14-09-2021

IS Sieve size (mm)	Weight of Sample retained (g)	Cumulative weight retained (g)	% Retained	% Passing	Specification Limits (%)
75.00	0	0	0	100	100
53.00	1539	1539	5.13	94.87	80-100
26.50	6451	7990	26.63	73.37	55-90
9.50	4681	12671	42.24	57.76	35-65
4.75	3591	16262	54.21	45.79	25-50
2.36	8372	24634	82.11	17.89	10-20%
0.85	2651	27285	90.95	9.05	2-10%
0.425	1923	29208	97.36	2.64	0-5
pan	792	30000	100	-	-

Remarks : Results found Satisfactory.

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FIELD DENSITY TEST
BY SAND REPLACEMENT METHOD
IS: 2720 (PART-28)

Layer: GSB

Date of Test: 09-09-2021

Sl No	Determination No.	1	2	3
1	Wt. of wet soil from hole (Ww) in gms	6005	6000	5998
2	Wt. of Sand + Cylinder before pouring (W1) in gm	15500		
3	Wt. of Sand + Cylinder after pouring (W2) in gm	10939	10932	10936
4	Wt. of Sand in hole in gm. Ws=(W1-W2-Wc)	3490	3497	3493
5	Volume of pit V=Ws/Density of sand	2521.68	2526.73	2523.84
6	Bulk density Yb=Ww/V g/cc	2.360	2.350	2.360
7	Field moisture content	4.400	4.500	4.450
8	Maximum Dry Density, gm/cc	2.300	2.300	2.300
9	Field moisture content in % by Rapid Moisture Meter)	4.900	5.000	4.950
10	OMC %	5.000	5.000	5.000
11	Dry density Yd = Yb/100+W gm/cc	2.250	2.238	2.249
12	% of Compaction	97.39	96.89	97.35
13	Desired density achieved/Not achieved	97.21		

Remarks : Results Found to be satisfactory.

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Sl no.	Description	Wet Mix			
		Quantity Cum	Frequency of Tests	Test required	Test Carried out
1	Gradation test	10795.50	1 sample/ source	3	3
2	Field density test		1 sample/ source	3	3

Note Frequency of tests as per Specifications MORT&H, V Revision, Section 900.

Consultancy | Contractor | Assistant Engineer | Assistant Executive Engineer

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GRADATION OF AGGREGATES

(WMM)

Total weight of sample taken (gms): 16000 — Date of Test: 21-09-2021

Sieve Size (mm)	Wt. Retained (gms)	Cumulative Wt. Retained (gms)	Cumulative Wt. Retained (%)	% Passing	Specification Limits
53 mm	0	0	0	100	100
45 mm	429	429	2.77	97.24	95 – 100
22.4 mm	4216	4645	29.08	71.11	60 – 80
11.2 mm	2810	7455	50	50.34	40 – 60
4.75 mm	2985	10440	67.3	33.16	25 – 40
2.36 mm	1913	12353	78.43	22.1	15 – 30
600 mic	992	13345	84.3	16.27	8 – 22
75 mic	1983	15328	96.09	4.56	0 – 8
Pan	672	16000	100	-	-

Remarks : Results Found to be satisfactory.

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